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ABSTRACT

The procedures used to develop a list of concepts taught in fourth-grade language arts are described. Thirty concepts from the list were randomly sampled and then analyzed. Analysis consisted of listing examples and non-examples, relevant and irrelevant attributes, subordinates and supraordinates, and a definition and principle for each concept. Based upon these analyses, items were written to test the attainment of each of the 30 concepts at twelve different levels. The items represent the application of a test-item model that prescribes the levels at which a concept can be tested. Analyses of the 30 selected concepts and illustrative examples of test items are presented in this paper. Two appendices are included, the first concerning logical analyses of language arts concepts regarding words, and the second concerning logical analyses of language arts concepts regarding word in sentences. (Author/DI)

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Working Paper No. 59

SELECTION AND ANALYSIS OF LANGUAGE ARTS CONCEPTS FOR INCLUSION IN TESTS OF CONCEPT ATTAINMENT

By Lester S. Golub, Wayne C. Fredrick,
Nancy J. Nelson and Dorothy A. Frayer

Report from the Project on
A Structure of Concept Attainment Abilities

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Wisconsin Research and Development
Center for Cognitive Learning
The University of Wisconsin
Madison, Wisconsin

November, 1971

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The Wisconsin Research and Development Center for Cognitive Learning focuses on contributing to a better understanding of cognitive learning by children and youth and to the improvement of related educational practices. The strategy for research and development is comprehensive. It includes basic research to generate new knowledge about the conditions and processes of learning and about the processes of instruction, and the subsequent development of research-based instructional materials, many of which are designed for use by teachers and others for use by students. These materials are tested and refined in school settings. Throughout these operations behavioral scientists, curriculum experts, academic scholars, and school people interact, insuring that the results of Center activities are based soundly on knowledge of subject matter and cognitive learning and that they are applied to the improvement of educational practice.

This Working Paper is from the Project on the Structure of Concept Attainment Abilities in Program 1. The general objectives of this project are to identify basic concepts in language arts, mathematics, science, and social studies appropriate at a given grade level; to develop tests to measure achievement of these concepts; and to develop and identify reference tests for cognitive abilities. These will be used to study the relationships between cognitive abilities and learned concepts in various subject matter areas. The outcome of the Project will be a formulation of a model of the structure of abilities in concept attainment in a number of subjects, including mathematics, science, and social studies, as well as language arts.

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ABSTRACT

The procedures used to develop a list of concepts taught in fourth-grade language arts are described. Thirty concepts from the list were randomly sampled and then analyzed. Analysis consisted of listing examples and non-examples, relevant and irrelevant attributes, subordinates and supraordinates, and a definition and principle for each concept. Based upon these analyses, items were written to test the attainment of each of the 30 concepts at twelve different levels. The items represent the application of a test-item model that prescribes the levels at which a concept can be tested. Analyses of the 30 selected concepts and illustrative examples of test items are presented in the paper.

I

INTRODUCTION

One objective of the Wisconsin Research and Development Center for Cognitive Learning is to carry out research to generate new knowledge about cognitive learning in children. One aspect of this research is the need to know what factors are present in the subject matters as they are currently taught in the elementary school. The present paper marks the beginning of a major research effort that has as its purpose the mapping of relationships among concepts within and across the subject-matter areas of language arts, mathematics, science, and social studies. The concept sampling, concept analyses, and test items in the present report and similar reports for the other subject-matter areas will become the basis for an understanding of the factorial structure of concept learning, as related to cognitive abilities.

The purpose of this working paper is to report the procedures and outcomes from one of the initial phases of the Concept Attainment Abilities Project (CAA). The general objectives of the CAA project are:

1. To identify basic concepts in fourth-grade language arts, mathematics, social studies, and science.
2. To develop test items to measure the attainment of these concepts.
3. To identify reference tests for cognitive abilities.
4. To study the relationships among levels of concept attainment in various subject matter areas and cognitive abilities.
5. To formulate a model of abilities in concept attainment.

The present working paper reports the procedures used to identify classificatory concepts in fourth-grade language arts; the selection and logical analysis of 30 of these concepts in terms of attributes, examples, definitions, related concepts, and principles; and the construction of test items designed to measure the attainment of each selected concept at 12 different levels.

In order to identify language arts concepts and to develop tests to measure their attainment, one must decide upon a workable definition of "concept." Bourne (1966) defines it as follows: "A concept exists whenever two or more distinguishable objects or events have been grouped or classified together and set apart from other objects on the basis of some common feature or property characteristic of each" (p. 1). This definition provided a basis for selection of concepts for this study. The definition offered by Klausmeier, Sterrett, Frayer, Lewis, Lee, and Bavry (1969) provided further clarification:

> Objects and events may be put into the same category on the basis of their criterial attributes. The category is usually given a name. In turn, the word that represents the category may be defined in terms of the criterial attributes of the category... concepts may be defined in terms of their intrinsic dimensions or attributes. The dimensions or attributes are abstracted as being alike or the same in otherwise dissimilar objects and thus define the concept from an objective point of view. For example, the attributes which allow some objects to be classified as oranges and others as lemons are size, color, shape, and taste. (p.3)

These definitions became the basic criteria for selection of concepts, and the concepts selected were ones fitting into a classification system. These concepts are also ones that are capable of being defined in terms of intrinsic characteristics and possess one- or two-word labels.

A classificatory concept in language arts was defined as a man-made grouping of things. This definition implies that one should be able to classify examples and non-examples of the concept, give reasons for inclusion or non-inclusion of things, define what the concept is in the abstract, and use it in relation to other concepts. The label is a necessary shorthand for a more detailed description which has been obtained from a consideration of the examples and non-examples of the concept. The words man-made grouping imply that the concept has been decided upon and used by humans, and that as a grouping it contains two or more examples.

This paper will give a description of the selection of language arts concepts, the analysis of each selected concept, and the test item construction based upon the analysis of the concept.

II

THE IDENTIFICATION OF CONCEPTS

The first consideration for concept selection was the grade level at which the test would be administered. Fourth grade children, who appear in Piaget's terms to be in a concrete developmental stage, were chosen for the study. Therefore, the domain of concepts consisted of all those single words or phrases that seemed to be classificatory concepts and were in some way treated in the fourth-grade language arts curriculum. The fourth grade level of six current textbook series (Dawson, 1968; Kirby, 1967; Pollack, 1967; Roberts, 1966; Sanders & Rosato, 1969; Tabachnick & Andersen, 1967) were searched and all classificatory concepts listed in the index or the body of these texts were recorded.

This huge number of concepts was then delimited by several arbitrary decisions and the application of necessary criteria. Not all of language arts seemed equally appropriate to the notion of "concepts," and more specifically "classificatory concepts." Three areas were chosen which seemed to contain the majority of the concepts on the lists. These areas were named Words, Words in Sentences, and Connected Discourse. Words contained the concepts related to letters, letter sounds, word parts, word types and word meanings. Words in Sentences contained the concepts of parts of speech, sentence punctuation, types of sentences, and word function. Connected Discourse contained the concepts of paragraphing, sentence function,

and letter writing. Major areas of language arts that were not considered included all rules on correct word usage and spelling, most of the skills of oral and written composition, listening skills and the reading of literature, and facets of the curriculum such as drama, courtesy, telephoning, and penmanship.

The list of concepts in the three areas was re-examined to exclude concepts that were not taught in the majority of the subsequently examined tests used by fourth grade children. Also excluded were concepts that were usually stressed at other grade levels and only touched upon in fourth grade. Furthermore, the concepts had to exhibit most of the characteristics agreed upon by the project.

The remaining list of concepts still contained many difficulties. Generally there were differences in the specific wording of concepts, definitions, and examples in the various textbooks. The texts were not consistent in the extent to which a particular concept was taught. The teachers who used a particular text might not be consistent in the extent to which they taught a concept or they might not always follow the textbook. These problems are not described so as to cast concern on the textbook writers or teachers; rather, the point is made because the variation made it nearly impossible to be sure that the list of concepts represented what was actually taught in the school systems that would provide subjects for the study. Several procedures were, however, used to get the best estimation of classroom practice. The list of concepts was submitted to the supervisor of language arts for the Madison (Wisconsin) Elementary Schools and to fourth-grade teachers. These practitioners then commented on the inclusion and exclusion of concepts in the actual curriculum. A

great deal of variability was observed.

The list was shortened considerably by including only those concepts about which there was general consensus among practitioners regarding appropriateness. The resulting list, which is given in Table 1, includes concepts that are generally in the fourth-grade textbooks in some form (though at other grades as well), that are generally emphasized in fourth grade (though not by all teachers), and that generally have attributes, examples, definitions and relationships to other concepts (though usually not all of these are emphasized at fourth-grade level). Thirty concepts--10 from each of three areas--were randomly selected from the list to be tested in the study.

A survey of 120 fourth-grade teachers was made to verify further the appropriateness of the selected concepts (Nelson & Steitz, 1970). The teachers were asked to respond to three questions about each concept: (a) Do you teach this concept in fourth grade? (b) Do your fourth-grade students (80-90%) know the definition of this concept? (c) Do you think your children (80-90%) are capable of recognizing this concept label?

Only 39 of the 120 teachers responded. Their responses, however, indicated that the majority of the selected language arts concepts are taught in Madison's fourth-grade classrooms. There were several concepts which the teachers felt were not taught or would not be familiar to the children. These concepts are: determiner, specific word, predicate, adjective, helping verb, present tense, and comparison. Table 2 shows teacher responses to the questions concerning the selected language arts concepts.

TABLE 1

Language Arts Concepts at Fourth Grade
and Original Selection of Concepts for Testing

Area I: Words	Area II: Words in Sentences	Area III: Connected Discourse
*abbreviation	*adjective	body
antonym	adverb	business letter
apostrophe	capital letter	closing
*compound word	colon	*comparison
*consonant	comma	conclusion
consonant blend	command	description
*contraction	common noun	*detail
*homonym	connector	envelope
hyphen	*determiner	example
long vowel	exclamation	*explanation
meaning	exclamation mark	*greeting
prefix	forms of be	*heading
rhyme	forms of have	indentation
root word	*helping verb	inside address
*short vowel	main verb	invitation
*silent letter	modifier	mailing address
*specific word	negative	main idea
*suffix	noun	narration
syllable	past tense	order of ideas
*synonym	*period	*paragraph
vowel	plural noun	poetry
word	*possessive noun	quotation
	*predicate	*return address
	preposition	signature
	*present tense	social letter
	pronoun	story
	proper noun	supporting sentence
	question	*thank you letter
	*question mark	theme
	regular verb	*title
	request	*topic sentence
	sentence	
	singular noun	
	*statement	
	subject	
	tense	
	*verb	

* Concepts that were originally selected for testing

TABLE 2

A Summary of 39 Questionnaires Completed by
Fourth-Grade Teachers Concerning Language Arts Concepts

Concepts	Concept Taught by Teacher	Predict Concept Known by 80-90% of Children	Predict Concept Label Recognized by 80-90% of Children
abbreviation	37 *	37	34
adjective	30	16	10
comparison	31	23	18
compound word	34	36	32
consonant	36	37	34
contraction	35	33	27
detail	23	18	15
determiner	2	1	2
explanation	26	23	18
greeting	35	34	28
heading	35	34	29
helping verb	27	14	11
homonym	34	30	26
paragraph	37	35	32
period	39	39	39
possessive noun	39	28	22
predicate	16	9	8
present tense	25	17	11
question mark	37	39	39
return address	35	31	26
short vowel	36	37	34
silent letter	38	38	34
specific word	20	14	13
statement	36	32	26
suffix	39	30	27
synonym	35	31	25
thank you letter	35	32	30
title	37	35	32
topic sentence	35	30	23
verb	37	30	23

* Number of teachers out of 39 responding positively

A study of reading difficulty by Nelson and Steitz (1970) also aided in determining the appropriateness of selected concepts. Thirty pupils in the first semester of fifth grade were asked to respond to the list of 30 concepts on an individual basis. The pupil was asked to read each concept name and then give a meaning for the word. If a student was unable to pronounce the word, he was given the word and asked to give a meaning.

Table 3 shows the number of pupils who responded with the correct pronunciation and meaning for each of the language arts concepts. There were no concepts which fewer than 50% of the pupils were able to pronounce, but fewer than 50% of the pupils were able to give a meaning to nine concepts: adjective, contraction, determiner, homonym, possessive noun, predicate, present tense, specific word, and synonym.

Based upon the reading study and teacher questionnaires the concept determiner was dropped from the original list. On the basis of item tryouts two more concepts, specific word, and statement, were dropped. Three more concepts were randomly selected to replace the concepts dropped: the concept word replaced the concept specific word in the area Words; determiner was replaced by pronoun, and sentence was substituted for statement, in the area Words in Sentences. These newly selected concepts were added to the remaining 27 concepts to comprise the final set presented in Table 4.

TABLE 3

Number of Fifth Grade Students Giving Correct Pronunciation and Correct Meaning for Each Language Arts Concept (Number of Subjects = 30)

Concepts	Correct Pronunciation	Correct Meaning
abbreviation	25	23
adjective	24	3
comparison	23	19
compound word	30	28
consonant	26	18
contraction	28	15
detail	30	18
determiner	22	3
explanation	24	18
greeting	30	27
heading	30	23
helping verb	30	17
homonym	27	13
paragraph	30	27
period	29	30
possessive noun	19	7
predicate	22	8
present tense	29	9
question mark	30	30
return address	30	29
short vowel	30	28
silent letter	29	30
specific word	20	10
statement	30	27
suffix	28	18
synonym	23	5
thank you letter	30	30
title	30	30
topic sentence	30	21
verb	30	9

TABLE 4

Thirty Language Arts Concepts Finally Selected for Analysis and Testing

Area I: Words	Area II: Words in Sentences	Area III: Connected Discourse
abbreviation	adjective	comparison
compound	helping verb	detail
consonant	period	explanation
contraction	possessive noun	greeting
homonyms	predicate	heading
short vowel	present tense	paragraph
silent letter	pronoun	return address
suffix	question mark	thank you letter
synonym	sentence	title
word	verb	topic sentence

III

ANALYSIS OF THE CONCEPTS

In order to teach concepts, one must analyze the concept into its teachable elements. In order to test a child's mastery of a concept, one must develop test items directly related to the elements of the concept. This chapter will describe the analysis of the 30 selected language arts concepts.[1] It will also describe the paradigm for testing level of concept attainment (Frayer, Fredrick, & Klausmeier, 1969) which guided the construction of test items based on the analyses.

The analysis of a concept entails the specification of certain kinds of information about the concept and its relationship to other concepts. This information includes intrinsic characteristics, irrelevant characteristics, hierarchical relationships with other concepts, a verbal definition, and lawful relationships with other concepts.

In Chapter I it was noted that a concept may be defined on the basis of features or properties which are common to all examples of the concept. Each of the 30 concepts was described in

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[1] Research and development related to the analysis of a concept and measurement of concept attainment has been the central emphasis of Project 101 of the Wisconsin R & D Center. The analysis of a concept was conceptualized by Professor Herbert J. Klausmeier and Dr. Dorothy A. Frayer. Refinement of the procedures for concept analysis was carried out by the members of a Seminar on Concept Learning conducted by Professor Klausmeier during the second semester 1969-1970.

terms of its intrinsic attributes. These intrinsic characteristics of a concept were called "relevant attributes." For example, the relevant attributes of predicate are that it is part of a sentence, and, contains the verb.

In addition to characteristics common to all examples of a concept, there are characteristics pertinent to certain specific examples of the concept in the real world, but not common to all examples. These characteristics which vary among examples of the concept were called "irrelevant attributes." For example, an irrelevant attribute of predicate is its tense. A predicate may be in either present tense or past tense.

One approach used to determine the relevant and irrelevant attributes of a concept was to think of as many different examples of the concept as possible. Those characteristics common to all of the examples were usually relevant attributes of the concept. Characteristics which occurred only in particular examples were irrelevant attributes of the concept. As an example of this type of approach, think of examples of the concept verb. A verb is always a type of word in a sentence that tells what is happening to the subject, it shows tense, and it is found in the predicate. These, then, are relevant attributes. All verbs do this, but not every verb is in present tense, not every verb has a helping verb, nor is it always the last word in the sentence. Therefore, these characteristics of tense, position in sentence, and inclusion of a helping verb are irrelevant attributes of the concept verb.

As noted above, concept examples exhibit all the characteristics relevant to a concept but vary in the irrelevant characteristics which

they exhibit. Nonexamples lack one or more of the relevant characteristics. Relevant and irrelevant attributes of a concept were, therefore, considered in choosing examples and nonexamples for testing concept mastery. Examples were used which showed variation in irrelevant characteristics. Nonexamples were selected, each lacking one of the relevant attributes. In the case of verb, for instance, present tense and past tense verbs were used as examples. Other parts of speech were used as nonexamples.

As the relevant attributes of various concepts were determined, a clearer picture of hierarchical relationships between the concepts emerged. For example, both predicate and verb have the relevant attribute of having to do with "telling what the subject did." Predicate, however, has the additional attribute of being made up of one or more words. It contains the verb, but it can include other words.

In each case where concepts shared relevant attributes, the more general concept was called the "supraordinate concept," the more specific concept the "subordinate concept." To illustrate the relationships that were discovered when we analyzed the selected concepts we have included hierarchical charts of each area. Figure 1 shows hierarchical relationships among concepts in the area of Words; Figure 2, relationships in the area of Words in Sentences; and Figure 3, relationships in the area of Connected Discourse. These hierarchical charts do not, of course, organize all possible relevant concepts related to the categories of Words, Words in Sentences and Connected Discourse. The hierarchical charts organize only the major concepts identified in the school course of study in language arts and in language arts texts used by the children participating in the study. This accounts, in part, for the "lopsided" nature of the hierarchies, for the inclusion of some concepts of lesser importance, and for the exclusion of some concepts of greater importance.

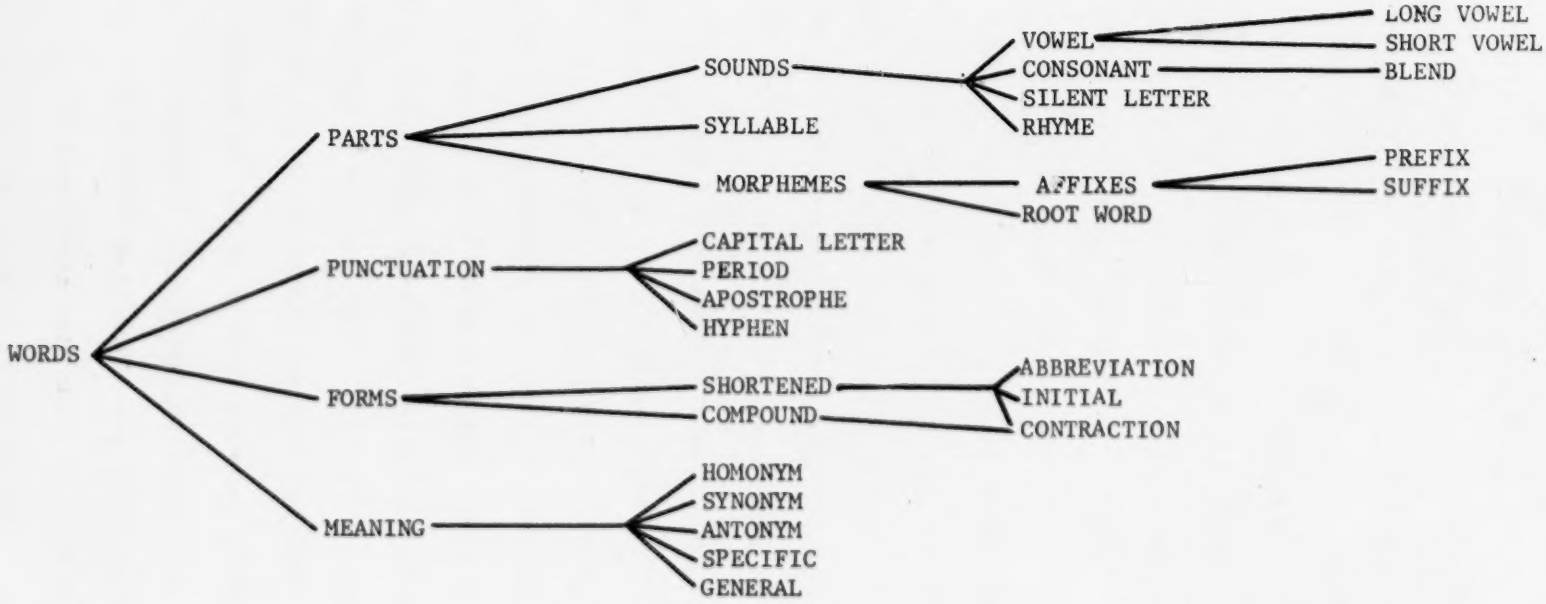

Figure 1. Hierarchical Relationships Among the Concepts of Fourth-Grade Language Arts

Area: Words

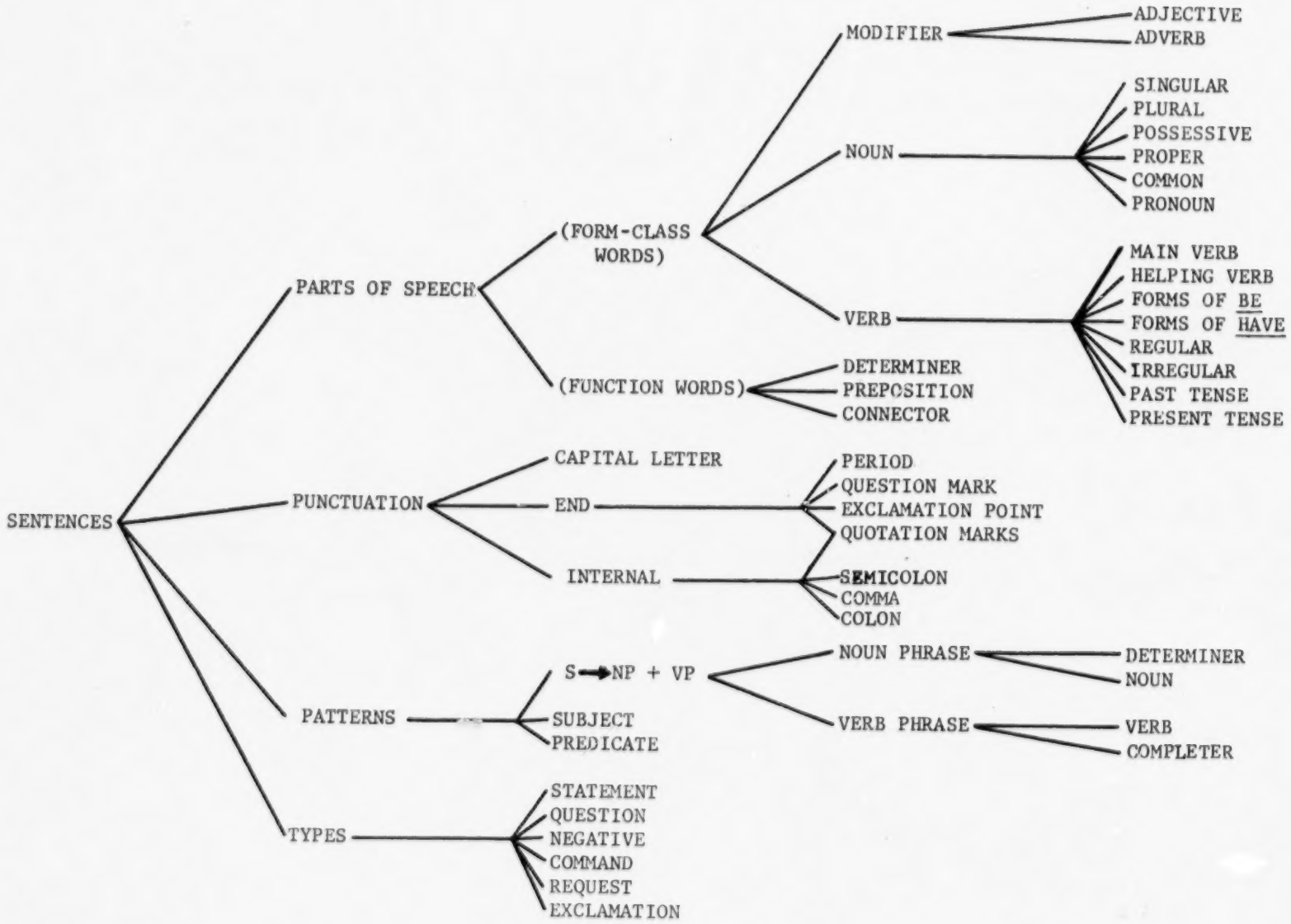

Figure 2. Hierarchical Relationships Among the Concepts of Fourth-Grade Language Arts Area: Words in Sentences

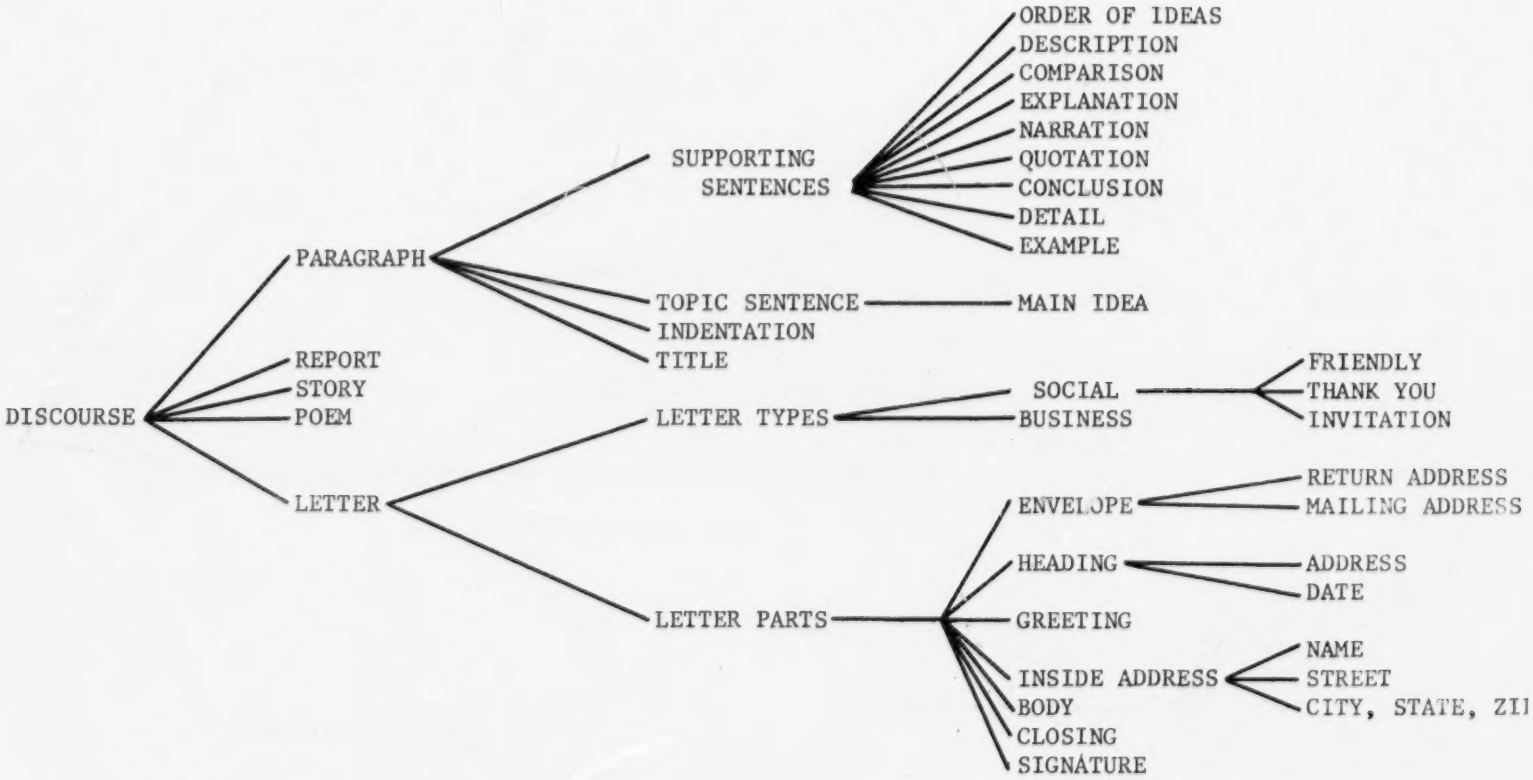

Figure 3. Hierarchical Relationships Among the Concepts of Fourth-Grade Language Arts Area: Connected Discourse

Another kind of information specified for each concept was a verbal definition. In some cases, the definition listed all of the relevant attributes of a concept. In other cases, the definition gave the name of a supraordinate concept and, in addition, listed the relevant attributes which distinguish the concept defined from the supraordinate concept. The relevant attributes which distinguish a concept from its supraordinate were called "criterial attributes." For example, helping verb was defined by noting that its supraordinate is verb, and that it is distinguished from other verb forms by the fact that it occurs with a main verb in the predicate.

Where possible, the definition for a concept that was used was taken from a fourth-grade textbook, or a combination of several textbook definitions. Where this was not possible the definition from an elementary dictionary was adopted or adapted. For some of the concepts, especially some of the compound-word concept labels, providing a good definition was difficult. Even though the real meaning behind the concept label synonym might be better stated in the phrase "two or more words of the same language that have the same or nearly the same essential meaning in some or all senses," this definition was not used because of its difficulty. Instead, the meaning of synonyms was written to describe it in fourth-grade terms: "Synonyms are two words that mean about the same thing but have a different sound and a different spelling."

A final type of information ascertained for each concept was its relationship to another concept. This relationship was often a principle stating a lawful relationship between two concepts. In other cases it described a probabilistic relationship which was usually, but not always,

true. An example of a statement of relationship is: "When a sentence ends with a question mark, it is asking something." This statement related the concepts sentence and question mark.

The analyses of the 30 concepts that were selected to be included in this study are presented in the Appendices. In these analyses, the concept being analyzed is called the "target concept." The name which is given to the concept is called the "target concept label." For each concept, a definition is given. Some definitions give the name of a supraordinate concept and the criterial attributes which distinguish the target concept from the supraordinate. Other definitions simply list all relevant attributes of the target concept.

The analysis of each concept indicates which concepts are supraordinate and which subordinate to the target concept. In addition, many analyses include "coordinate concepts." Coordinate concepts have the same supraordinate concept but different criterial attributes than the target concept. For example, heading and greeting are coordinate concepts since they have the same supraordinate, letter parts, but different criterial attributes.

In each analysis the criterial attributes which distinguish the target concept from its supraordinate are explicitly listed. Also, other attributes are listed which are relevant to the concept but do not distinguish it from its supraordinate. Many irrelevant attributes are noted for each target concept. Examples and nonexamples are also given for each concept. Finally, the analyses include statements showing the relationship of the target concept to at least one other concept.

To develop these analyses, item writers consulted English language specialists, textbooks, and dictionaries in order to identify authentic and intrinsic attributes and other characteristics of every concept, and to plan questions that could reasonably be expected to test fourth-graders' attainment of each concept.

The next step was that the "working group" for the project, i.e., the item writer from each subject area, an experienced elementary teacher who advised about readability, and the project manager, met and critiqued every analysis. The members of this group critiqued any part of an analysis of a concept on any logical basis. For instance, bases of criticism included inappropriateness of the analysis for fourth-grade children or failure of a part of the analysis to fit the description of the information required. In addition, the group suggested various additions or improvements in form. After these revisions were incorporated into the analysis, the item writer and the principal investigator went over them again. The principal investigator assumed primary responsibility for their authenticity and had the power of final decision.

The analyses, then, summarized the teachable elements of each concept. The next step was to devise test items to test knowledge of these elements. Items were constructed in accord with a paradigm for testing level of concept attainment developed by Frayer, Fredrick, and Klausmeier (1969). This paradigm consists of 12 types of questions which can be used to test knowledge of a given concept. The 12 types of items which comprise the paradigm are shown in Table 5.

TABLE 5

Twelve Tasks that Test Aspects of Concept Attainment

Level	Given the . . .	the student can select the . . .	Prototype of Item Stem
1.	Name of an attribute	Example of the attribute	Which is (name of an attribute)?
2.	Example of an attribute	Name of the attribute	(Example of an attribute) is an example of:
3.	Name of a concept	Example of the concept	Which of these is (name of concept)?
4.	Name of a concept	Non-example of the concept	Which of these is NOT (name of concept)?
5.	Example of a concept	Name of the concept	(Example of concept) is an example of:
6.	Name of a concept	Name of the relevant attribute of the concept	What is always true about (name of concept)?
7.	Name of a concept	Name of the irrelevant attribute of the concept	What is NOT always true about (name of concept)?
8.	Definition of a concept	Name of the concept	(Definition) is called:
9.	Name of a concept	Definition of the concept	What is the meaning of (name of concept)?
10.	Name of a concept	Name of the supraordinate concept	(Name of concept) is a kind of/use of/part of:
11.	Name of a concept	Name of the subordinate concept	Which of these is a kind of/use of/part of (name of concept)?
12.	Names of two concepts	Statement which relates the two concepts	Which is true about (name of concept) and (another concept)?

IV

THE WRITING OF TEST ITEMS

The nature of each test item was developed with the purpose of testing a child's knowledge of the elements of each selected concept. The items were constructed in accord with the paradigm for testing the level of concept mastery (Frayer, Fredrick, & Klausmeier, 1969) discussed in Chapter III.

The content appearing in the items was based upon the analyses for each individual concept presented in the Appendices. The decision about what specific information from the analyses was used was left up to each individual item writer. In this manner he was free to select attributes tested in item types 1, 2, 6 and 7; he chose examples and nonexamples for item types 3, 4 and 5; and he used his own judgment as to the writing form of the items and to the selection of incorrect choices.

Considerations for item writing were threefold. First, it was important to adequately represent the types of tasks outlined in the paradigm of testing concept mastery. This required agreement and consistency in interpretation of the tasks by item writers even though there might be variation in actual wording among them. Standardization of wording was suggested, such as for item 9, "What is the meaning of (concept name)?"

A second consideration was to make the vocabulary simple enough to assure good readability. Subjective judgment was used, together with

information from formulas, reading textbooks, and word lists. Thirty fifth-grade students in the Madison School System gave an indication of some words that appeared difficult in the language arts items.

The construction of reasonable distractors is an important consideration. Two to five options were used for a test item. A serious attempt was made to use distractors that were related in some way to the concept or that fit into the same general area of language arts. One criterion used in reviewing distractors was uniform length. It was felt that a student might select a choice that was visibly different either in length or form. Illustrative items of each task type for the concept possessive noun are as follows:

Concept: POSSESSIVE NOUN

1. Given: name of attribute

   Select: example of attribute

   Item example:

   Which of the following shows ownership?

   A. they're fun
   * B. the doctor's house
   C. could've bought
   D. he said, "Hello"

2. Given: example of attribute

   Select: name of attribute

   Item example:

   "The man's dog ran away." In this sentence man's dog shows:

   A. letters left out
   * B. ownership
   C. a compound word
   D. plural form

* Asterisk indicates correct answer.

3. Given: name of concept

   Select: example of concept

   Item example:

   Which of these is a possessive noun?

   * A. boys'
     B. our
     C. can't
     D. oxen

4. Given: name of concept

   Select: non-example of concept

   Item example:

   Which is NOT a possessive noun?

     A. children's
     B. pigs'
   * C. we've

5. Given: example of concept

   Select: name of concept

   Item example:

   Boys' is an example of:

     A. a contraction
   * B. a possessive noun
     C. a pronoun
     D. an abbreviation

6. Given: name of concept

   Select: relevant attributes of the concept

   Item example:

   A possessive noun always needs:

     A. a capital letter
     B. a plural noun
   * C. an apostrophe

7. Given: name of concept

   Select: irrelevant attributes of the concept

   Item example:

   A possessive noun is NOT always:

   A. a word showing ownership
   B. found with a mark of punctuation
   * C. plural

8. Given: definition of concept

   Select: name of concept

   Item example:

   The form of a noun that shows ownership is called:

   A. a contraction
   B. a proper noun
   * C. a possessive noun
   D. a suffix

9. Given: name of concept

   Select: definition of concept

   Item example:

   What is the meaning of possessive noun?

   A. a shortened form of a word that is made up of two words
   B. a word in which letters have been left out
   C. the word which shows who spoke
   * D. a word that shows ownership

10. Given: name of concept

Select: supraordinate concept

Item example:

A possessive noun is a kind of:

* A. part of speech
B. word ending
C. sentence
D. end punctuation

11. Given: name of concept

Select: subordinate concept

Item example:

Which of these can be a kind of possessive noun?

A. a suffix
B. an adjective
C. a verb
* D. a plural word

12. Given: name of two concepts

Select: statement which relates the two concepts

Item example:

What is true about a possessive noun and a possessive pronoun?

A. A possessive noun shows tense and a possessive pronoun does not.
B. A possessive noun is found in the subject of a sentence but a possessive pronoun is not.
C. Both possessive noun and possessive pronoun are found in every sentence.
* D. A possessive noun has a mark of punctuation, but a possessive pronoun has no punctuation.

For each of the 30 selected language arts concepts similar items were constructed. Working Paper No. 60 (Golub, Fredrick, & Nelson, in press) of the Wisconsin Research and Development Center for Cognitive Learning contains the complete set of test items.

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APPENDIX I

LOGICAL ANALYSES OF TEN LANGUAGE ARTS CONCEPTS REGARDING WORDS

CONCEPT ANALYSES

Target Concept Label:

Abbreviation
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supra-ordinate concept, then all attributes of the target concept should be given.)

An abbreviation is a shortened form of a word or phrase made up of one or more letters.

Supraordinate Concept(s):

shortened word form (morphemes)

Coordinate Concept(s):

contraction

Subordinate Concept(s):

initial

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

An abbreviation:

a) is a shortened form of a word or phrase
b) is one or more letters used to stand for a word or phrase
c) usually ends with a period

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to abbreviation are those of its supra-ordinate, shortened word form.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of abbreviation include:

1. the number of letters
2. kind of word or phrase shortened
3. the use of a capital letter
4. the use of a period

Concept examples include the following:

Mon.	Dr.	USA
Jan.	Aug.	USSR
oz.	Mr.	

Concept non-examples include the following:

I'll	3:30
can't	I
Bob's	

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

When proper nouns are abbreviated they are capitalized.

CONCEPT ANALYSES

Target Concept Label:

Compound
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supra-ordinate concept, then all attributes of the target concept should be given.)

A compound word is a single word made up of two or more words.

Supraordinate Concept(s):

root word

Coordinate Concept(s):

shortened word

Subordinate Concept(s):

contraction

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A compound word:

a) is a word that has a root word
b) is a word made from 2 or more words
c) is 2 or more words put together in a particular order

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to compound word are those of its supraordinate, root word.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of compound word include:

1. the kind of letters
2. the number of syllables
3. the words used
4. the part of speech

Concept examples include the following:

giftshop	bandleader	we've
headhunter	football	nevertheless
basketball	rowboat	

Concept non-examples include the following:

remember	careful
interesting	rewind
mama	

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

A compound word has more than one syllable.

CONCEPT ANALYSES

Target Concept Label:

Consonant
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

A consonant is a letter of the alphabet that can be placed before or after a vowel to make a syllable.

Supraordinate Concept(s):

alphabet letter

Coordinate Concept(s):

vowel

Subordinate Concept(s):

hard sound
soft sound
blend

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A consonant:

a) is a letter used with a vowel to make a syllable in a word
b) is a letter which has a speech sound made by stopping the breath with the tongue, teeth or lips.

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to consonant are those of its supraordinate alphabet letter.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of <u>consonant</u> include:

1. its position in a word
2. its pronunciation
3. the number of instances found in a word
4. the particular vowels used with a consonant

Concept examples include the following:

r, k, v, d, m
cl br

Concept non-examples include the following:

a, e, ua, 5,
4, =, ?
ly, the, u

Relationship with at least one other concept. (This relationship should preferably by a principle. It should definitely <u>not</u> be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

There are two <u>consonants</u> that may also be used as <u>vowels</u>.

CONCEPT ANALYSES

Target Concept Label:

Contraction
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

A contraction is a shortened form of a word made up of two words with certain sounds and letters left out and marked with an apostrophe.

Supraordinate Concept(s):

shortened word form (morpheme)

Coordinate Concept(s):

abbreviation

Subordinate Concept(s):

negative, compound word

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A contraction:

a) is a word that has sounds and letters left out
b) is a word where the letters left out are marked by an apostrophe

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to contraction are those of its supraordinate, shortened word form.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of contraction include:

1. the number of letters left out
2. the ending of the word
3. the part of speech
4. the particular letters left out

Concept examples include the following:

couldn't	they'll
we've	can't
he's	I'm

Concept non-examples include the following:

Bob's car	drumbeat
Dear Sir:	to-two-too
James' book	

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Contractions themselves are words, but abbreviations are not words.

CONCEPT ANALYSES

Target Concept Label:

Homonyms
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supra-ordinate concept, then all attributes of the target concept should be given.)

Homonyms are two words that are pronounced the same, but have different meanings.

Suprordinate Concept(s):

word
word comparison

Coordinate Concept(s):

antonym
synonym

Subordinate Concept(s):

homonyms which have the same spelling
homonyms which are both nouns

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A homonym:

a) is pronounced like another word in the language
b) has a meaning that is different from the word it sounds like

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to homonym are those of its supraordinate, word.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of homonym include:

1. the number of syllables
2. the form class
3. the spelling
4. the etymology of the two or more words that are homonyms

Concept examples include the following:

they're - there
no - know
one - won
to - too - two
by - buy
hour - our

bat (mammal) - bat (club)
trunk (elephant) - trunk (suitcase)

Concept non-examples include the following:

in - win
use - useless
man - men
free - freedom

open - closed
hard - difficult
lead (led) - lead (lēd)

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Two words cannot be both homonyms and synonyms.

CONCEPT ANALYSES

Target Concept Label:

Short Vowel
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

A short vowel is the letter sound of a, e, i, o, or u when it does not sound like its own name.

Supraordinate Concept(s):

vowel
letter sound

Coordinate Concept(s):

long vowel

Subordinate Concept(s):

short i sound

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A short vowel:

a) has a sound other than its own name

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to short vowel are those of its supraordinate, vowel.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of short vowel include:

1. the particular sound
2. position in a word
3. particular consonants used with the vowel
4. the number of instances found in a word

Concept examples include the following:

pit	snapper
runner	ship
mop	met

Concept non-examples include the following:

bake	bottle
stop	make
mean	

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Short vowels can be found between two consonants.

CONCEPT ANALYSES

Target Concept Label:

Silent Letter
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

A silent letter is a letter that is found in the spelling of a word but which is not sounded.

Supraordinate Concept(s):

spelling of words
alphabet letter

Coordinate Concept(s):

long vowel
blend

Subordinate Concept(s):

final e

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A silent letter:

a) is a letter in the spelling of a word
b) is a letter that is not pronounced even though it is found in a word

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to silent letter are those of its supraordinate, spelling of words.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of silent letters include:

1. the position in a word
2. the particular letter silent
3. the occurrence in a word
4. the number of silent letters in words

Concept examples include the following:

climb	brake
know	bite
sight	lamb
known	

Concept non-examples include the following:

city	book
hurt	shape
boys	brake

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

A word can contain more than one silent letter.

CONCEPT ANALYSES

Target Concept Label:

Suffix
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

A suffix is an addition of letters at the end of a word.

Supraordinate Concept(s):

additions to words

Coordinate Concept(s):

prefix

Subordinate Concept(s):

plural ending

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A suffix:

a) is one or more letters added to a word
b) is one or more letters added to the end of a word
c) is one or more letters added to a root word

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to suffix are those of its supraordinate, additions to words.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of suffix include:

1. the number of letters
2. the part of speech of the root word
3. the change in meaning to the root word
4. the particular letters making up the suffix

Concept examples include the following:

careful
slowly
faithful
runs
walking

Concept non-examples include the following:

require
as a kitten
kitten
brother
couldn't

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

A suffix changes the meaning of a word.

CONCEPT ANALYSES

Target Concept Label:

Synonym
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

Synonyms are two words that mean about the same thing but have a different sound and a different spelling.

Supraordinate Concept(s):

word
word comparison

Coordinate Concept(s):

antonym
homonym

Subordinate Concept(s):

synonyms which are the same part of speech

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

Synonyms:

a) are two words that mean the same thing
b) are two words that are pronounced differently
c) are two words that are spelled differently

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to <u>synonym</u> are those of its supraordinate, <u>word</u>.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of synonym include:

1. the number of syllables
2. the form class
3. the spelling
4. the etymology of the two or more words that are synonyms

Concept examples include the following:

small - little
fast - quick
bright - shiny
big - large

Concept non-examples include the following:

little - big
small - huge
three - tree
open - shut
there - they're
run - fun

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Synonyms are used to explain meanings of words.

CONCEPT ANALYSES

Target Concept Label:

Word
(Area: Words)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

A word is a letter or group of letters having sound and meaning, and used as a single unit in writing and speaking.

Supraordinate Concept(s):

letter groupings

Coordinate concept(s):

Subordinate Concept(s):

compound
contraction
homonym
synonym
noun
verb
adjective
adverb

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A word:

a) is made up of one or more letters
b) is used as a single unit
c) has meaning

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to word are those of its supraordinate, letter groupings.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of word include:

1. the number of letters
2. the part of speech
3. the number of consonants or vowels
4. the tense
5. the particular meaning
6. if the word is singular or plural

Concept examples include the following:

zip
I
in
a
by

Concept non-examples include the following

-ble	-tion
-ing	-es
ir	lb.
USSR	
X	

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Every word has a vowel sound.

APPENDIX II

LOGICAL ANALYSES OF TEN LANGUAGE ARTS CONCEPTS REGARDING WORDS IN SENTENCES

CONCEPT ANALYSES

Target Concept Label:

Adjective
(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

An adjective is a word that tells about a noun or pronoun.

Supraordinate Concept(s):

part of speech
modifiers
words

Coordinate Concept(s):

adverb

Subordinate Concept(s):

words that tell how things look
words that tell about things

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

An adjective:

a) is a word the tells how things look, sound, feel, taste or smell
b) is a word that tells about a noun

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to adjectives are those of its supraordinates words or modifiers.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of adjectives include:

1. the meaning of the word
2. the noun or pronoun being described
3. the number of letters or syllables in the word
4. the position of the word in a sentence
5. the frequency with which it occurs in sentences.

Concept examples include the following:

little box	large door
warm kitchen	best home
little door	red house
little drummer	

Concept non-examples include the following:

What happened to the little box that was on the shelf yesterday?
going home

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Adverbs can be used to tell about adjectives.

CONCEPT ANALYSES

Target Concept Label:

Helping Verb
(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

A helping verb is the verb or verbs before the main verb.

Supraordinate Concept(s):

verb

Coordinate Concept(s):

regular verb
irregular verb

Subordinate Concept(s):

forms of <u>be</u>

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A helping verb:

a) is a kind of verb
b) is a word found in the predicate
c) is a word that comes before the main verb

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to <u>helping</u> <u>verbs</u> are those of its supraordinate, <u>verb</u>.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of helping verb include:

1. the position in a sentence
2. the particular verb with which it is used
3. the particular form of verb used
4. the number of instances in a sentence

Concept examples include the following:

were hoping	was going
can run	has been here
have gone	be seeing me

Concept non-examples include the following:

The boys were hoping to win.
will not run

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

In a sentence, the subject and the helping verb should agree in number.

CONCEPT ANALYSES

Target Concept Label:

Period
(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supra-ordinate concept, then all attributes of the target concept should be given.)

A period is a punctuation mark used at the end of statements and abbreviations.

Supraordinate Concept(s):

end punctuation

Coordinate Concept(s):

comma
question mark
exclamation mark
apostrophe

Subordinate Concept(s):

periods used after some abbreviations

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A period:

a) is a mark at the end of statements
b) is a mark used at the end of some abbreviations

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to period are those of its supra-ordinate, end punctuation.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of <u>period</u> include:

1. its occurrence with quotation marks
2. its use only with sentences
3. the length of sentences in which it is used
4. the number of letters in an abbreviation in which it is found

Concept examples include the following:

. St.

Concept non-examples include the following:

! r can't ? "

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely <u>not</u> be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

A <u>sentence</u> does not have to end with a <u>period</u>.

CONCEPT ANALYSES

Target Concept Label:

Possessive noun
(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

A possessive noun is the form of a noun that shows ownership.

Supraordinate Concept(s):

noun
part of speech

Coordinate Concept(s):

proper noun
common noun
plural noun
singular noun

Subordinate Concept(s):

plural possessive
singular possessive

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A possessive noun:

a) is a word with a mark of punctuation (apostrophe)
b) is a word showing ownership

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to possessive noun are those of its supraordinate, noun.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of possessive noun include:

1. the use of a capital letter
2. the kind of noun made possessive
3. the position of the apostrophe in the word
4. whether the noun is singular or plural

Concept examples include the following:

boys'	man's
children's	pigs'

Concept non-examples include the following:

can't	oxen
we've	half-back

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

A possessive noun has a mark of punctuation but a possessive pronoun has no punctuation.

CONCEPT ANALYSES

Target Concept Label:

Predicate
(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supra-ordinate concept, then all attributes of the target concept should be given.)

The predicate is the part of the sentence that contains the verb.

Supraordinate Concept(s):

sentence part

Coordinate Concept(s):
subject

Subordinate Concept(s):

simple predicate
compound predicate

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A predicate:

a) is one or more words which are part of a sentence
b) is the part of the sentence which has the verb

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to predicate are those of its supraordinate, sentence part.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of predicate include:

1. the tense
2. the position in a sentence
3. the mark of punctuation used
4. the number of words used
5. the meaning of the sentence

Concept examples include the following:

John cut the lawn.
sang a song

was singing
went to the park

Concept non-examples include the following:

The house in the park is empty.
My friend John lives in New York.
The boy named John was very smart.

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

A sentence must have both a predicate and a subject.

CONCEPT ANALYSES

Target Concept Label:

Present Tense
(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

Present tense is the verb tense that shows something happening now or in the future.

Supraordinate Concept(s):

verb

Coordinate Concept(s):

past tense

Subordinate Concept(s):

-s form ending of verbs (plays)

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

Present tense:

a) tells something about verbs
b) is a word-form different from past tense
c) shows what is happening now or in the future

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to present tense are those of its supraordinate, verb.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of present tense include:

1. the presence of a helping verb
2. the particular ending used on the verb
3. showing future only
4. showing what is happening now only
5. the particular verb used

Concept examples include the following:

I am winning.
He is running.
He runs.
They are playing a game.

Concept non-examples include the following:

He won.
He ran.
They had lost.
John ate a candy bar.
was very smart

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

All verbs have a present tense form.

CONCEPT ANALYSIS

Target Concept Label:

Pronoun
(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supra-ordinate concept, then all attributes of the target concept should be given.)

A pronoun is a word that is used in place of a noun.

Supraordinate Concept(s):

part of speech
word
noun substitute

Coordinate Concept(s):

Subordinate Concept(s):

pronouns which refer to persons
pronouns which refer to things
possessive pronouns

Criterial attributes that identify the target concept within the selected supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A pronoun:

a) is a word used the same way as a noun
b) refers to persons or things
c) is used as a substitute for a noun

Other attributes that are relevant but not criterial for the target concept include the following: (The attributes of the supraordinate need not be specified.)

Other attributes relevant to pronoun are those of its supraordinate word or part of speech.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of pronoun include:

1. the number of instances in a sentence
2. the number of letters in the pronoun
3. the particular noun it replaces
4. the particular pronoun used
5. its position in a sentence
6. whether or not it is singular or plural

Concept examples include the following:

I	it
us	you
they	
he	
her	

Concept non-examples include the following:

the	and
a	but
an	
by	

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

One of the words making up a contraction can be a pronoun.

CONCEPT ANALYSES

Target Concept Label:

Question Mark
(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, than all attributes of the target concept should be given.)

A question mark is a mark of punctuation used at the end of a question.

Supraordinate Concept(s):

end punctuation

Coordinate Concept(s):

exclamation mark
period
comma
apostrophe

Subordinate Concept(s)

(use of) after a request

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A question mark:

a) is a mark of end punctuation
b) is a mark at the end of questions

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to question mark are those of its supraordinate, end punctuation.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of question mark include:

1. its use with quotation marks
2. its use in a paragraph
3. the number of words in the question

Concept examples include the following:

?

Concept non-examples include the following:

! " - .)

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

When a sentence ends with a question mark it asks something.

CONCEPT ANALYSES

Target Concept Label:

Sentence
(Kernel sentence)

(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supra-ordinate concept, then all attributes of the target concept should be given.)

A sentence is a group of words with a subject and predicate, begins with a capital letter, and ends with an end-punctuation mark.

Supraordinate Concept(s):

grouping of words

Coordinate Concept(s):

phrase

Subordinate Concept(s):

question
command
statement

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A sentence:

a) has a subject and predicate
b) begins with a capital letter
c) ends with a mark of punctuation
d) tells or asks something

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to sentence are those of its supraordinate, group of words.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of sentence include:

1. the number of words
2. the type of verb
3. the type of end punctuation
4. the kind of sentence
5. whether the sentence is found in a paragraph
6. the position of the subject and predicate

Concept examples include the following:

We saw a dog.
You have a piece of chalk.
The boys walked in the pool.
We write with chalk.
He left the house without eating lunch.
Dogs like to chase rabbits.
Running fast, John caught the bus.

Concept non-example include the following:

was looking for the chalk
In the park
a piece of chalk
at the top of the blackboard
walking in the park.

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

A paragraph is made up of one or more sentences.

CONCEPT ANALYSES

Target Concept Label:

Verb
(Area: Words in Sentences)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

A verb is a word in the predicate that shows tense and tells what the subject did.

Supraordinate Concept(s):

part of speech
word

Coordinate Concept(s):

noun

Subordinate Concept(s):

action verb
forms of be

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A verb:

a) is a word in the predicate
b) is a word that shows tense
c) is a word that tells what the subject did
d) is a word that shows action or a state of being

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to verb are those of its supraordinates part of speech or word.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of verb include:

1. the tense of the verb
2. the inclusion of a helping verb
3. the position in a sentence
4. number of instances in a sentence

Concept examples include the following:

The bird flew.
Big Mike tried to hit the ball but missed.

Concept non-examples include the following:

The bird can fly.
The yellow bird flew a mile.
Big Mike tried to hit the ball but missed.

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

A suffix can be added to a verb to change the tense of the verb.

APPENDIX III

LOGICAL ANALYSES OF TEN LANGUAGE ARTS CONCEPTS REGARDING CONNECTED DISCOURSE

CONCEPT ANALYSES

Target Concept Label:

Comparison
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.) A comparison is a statement which gives the related similarities or differences of one thing to another.

Supraordinate Concept(s):

sentence making observation

Coordinate Concept(s):

sentences
showing differences

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A comparison:

a) is a word or group of words that describe two things
b) is a word or group of words that connect one thing to another
c) is a word or group of words that show how things are alike or different

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to comparison are those of its supraordinate, sentences making observation.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of comparison include:

1. the use as main idea of a paragraph
2. the use of words "like" or "as"
3. the position in a sentence
4. showing only differences
5. showing only likenesses

Concept examples include the following:

The boys were stronger than the girls.
John is as tall as Peter.
The clouds are prettier in the morning than in the afternoon.
The peanuts are saltier than the popcorn.

Concept non-examples include the following:

He is a boy.
Bob caught a fish and a turtle.
Mary was wearing a red dress and hat.
Several trucks and cars were parked there.
Are you going to town?

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Adjectives are words used to make comparisons.

CONCEPT ANALYSES

Target Concept Label:

Details
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

Details are words used to explain or describe ideas or objects more completely.

Supraordinate Concept(s):

words
descriptive words

Coordinate Concept(s):

topics
titles

Subordinate Concept(s):

colors
physical dimensions
description of senses

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

Details:

a) are used to explain ideas or objects
b) are used to explain more completely
c) are used to describe the smallest element or parts

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to details are those of its supraordinate, words.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of details include:

1. the part of speech
2. the occurrence in all sentences
3. the use of "like" or "as"
4. the particular idea or object
5. being explained more completely

Concept examples include the following:

John took the dog to the kennel.
Mary put the piano in the living room.
The boy wore dark clothing and carried a knife.
The large hand on my clock glows in the dark.
A cat's meow can sound like a baby.
The feet of a cat have soft pads and sharp claws.
The hat he wore was old and much too small.

Concept non-examples include the following:

Bill took the thing somewhere.
Someone put the thing there.
The figure wore stuff and carried something.
There are many kinds of cats.
Almost everybody lives by the clock.

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Supporting sentences use details to explain topic sentences.

CONCEPT ANALYSES

Target Concept Label:

Explanation
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

Explanations are sentences that give reasons for the facts given in other sentences.

Supraordinate Concept(s):

statement

Coordinate Concept(s):

sentence giving detail
description

Subordinate Concept(s):

none

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

An explanation:

a) is one or more sentences
b) is one or more sentences giving reasons
c) is one or more sentences giving support to other sentences.

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to explanation are those of its supraordinate, statement.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of explanation include:

1. the position in a paragraph
2. whether or not it is the main idea of a paragraph
3. the particular things being explained
4. the number of sentences it contains
5. the number of various parts of speech

Concept examples include the following:

He cried because of . . . .
He kept trying so that he would get an A.
This was because of his good grades.
The dog ate fast because he was very hungry.

Concept non-examples include the following:

He is sadder than I am.
He wrote his story on yellow paper with a pencil.
She is as pretty as a movie star.
Will you leave me alone!
There is a modern kind of chair.

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Explanations use details to give reasons or to make something clear.

CONCEPT ANALYSES

Target Concept Label:

Greeting
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept, (If there is no supra-ordinate concept, then all attributes of the target concept should be given.)

A greeting is the part of a letter that says hello to the receiver.

Supraordinate Concept(s):

letter parts

Coordinate Concept(s):

heading
body
closing
signature
inside address

Subordinate Concept(s):

"Dear"

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A greeting:

a) is a word or words that come after a heading
b) is a word or words that end with a comma or colon
c) is a word or words that say hello

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to greeting are those of its supraordinate, letter parts.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of greeting include:

1. the particular word used
2. the end punctuation used
3. the particular person being greeted

Concept examples include the following:

Dear Sir:
Dear Sam,
Sirs:
Dear Jim:

Concept non-examples include the following:

Sincerely yours,
Thank you
14 Green Street
Tom Sawyer
John's my dear friend.

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

The greeting is followed by a colon in a business letter.

CONCEPT ANALYSES

Target Concept Label:

Heading
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supra-ordinate concept, than all attributes of the target concept should be given.)

The heading of a letter is the first part of a letter which has the address of the sender and the date.

Supraordinate Concept(s):

letter parts

Coordinate Concept(s):

greeting
body
signature
inside address
closing

Subordinate Concept(s):

none

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified)

A heading:

a) is the part of a letter that gives the date
b) is the part of a letter that comes first
c) is the part of a letter that gives an address

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to heading are those of its supraordinate, letter parts.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of heading include:

1. the number of lines
2. the inclusion of a period
3. the use of abbreviated words
4. the exact date

Concept examples include the following:

13 Green St. Dayton, Ohio July 10, 1969	21 Bowie Lane Rock, Illinois 62134 April 1, 1984	411 East Drive Waco, Texas July 30, 1969

Concept non-examples include the following:

John Brown Sincerely yours,	Dear Mr. Boyd: Huckleberry Finn
John Doe 21 South Fourth St. Boston, Massachusetts 20011	Mr. Dale Harper 19 Valley Road Melton, Virginia

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

The address found in the heading of a letter is also found in the return address.

CONCEPT ANALYSES

Target Concept Label:

Paragraph
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, than all attributes of the target concept should be given.)

A paragraph is a series of sentences all about the same topic and which begin with an indented sentence.

Supraordinate Concept(s):

report
grouping of words; sentences

Coordinate Concept(s):

verse of poetry

Subordinate Concept(s):

none

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A paragraph:

a) is a series of sentences
b) is a series of sentences that has a topic sentence
c) is a series of sentences in which the first sentence is indented
d) is a series of sentences about the same topic

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to paragraph are those of its supraordinate report.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of paragraph include:

1. the number of sentences
2. the particular topic of the paragraph
3. the use of a title
4. the kind of punctuation used
5. the content of the paragraph

Concept examples include the following:

For many years the great forests were cut carelessly. Only the most valuable timber was taken and the rest was wasted. Fires often swept the timberland. But now we have realized the value of the forests.

The use of the pool has been planned to include everybody. It is open until five each day. On Saturday it will be filled with fresh water.

Libraries have books and magazines of all kinds. These can be checked out. The more reading there is, the better.

"The answer is no," said Pete.

Concept non-examples include the following:

They're - their - there
running through the woods
is to be granted a wish

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Each paragraph has one main idea.

CONCEPT ANALYSES

Target Concept Label:

Return Address
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

The return address is the address on an envelope that gives the name and address of the sender.

Supraordinate Concept(s):

letter parts

Coordinate Concept(s):

address
inside address
heading

Subordinate Concept(s):

none

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A return address:

a) is a kind of address
b) is a kind of address on an envelope or letter
c) is a kind of address that gives the name and address of the sender

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to return address are those of its supraordinate, letter parts.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of return address include:

1. the particular words used
2. the number of lines
3. inclusion of the zip code

Concept examples include the following:

Mr. Tom Brown
Route 3
Clint, Massachusetts

Miss Barb Field
18 White Avenue
Lucky, Kentucky

John Doe
Fourth Street
Berry, Iowa

1850 Elm Drive
Evans, Wisconsin

10 Beech Street
Linden, Texas 60133

Concept non-examples include the following:

John, will you please come back here?
Thank you for the present you sent.
July 15, 1966
Rev. Mr. John Davis
Please come here this second!

113 Water Street
Freeport, Rhode Island
July 13, 1968

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

The return address tells who sent the thank you letter.

CONCEPT ANALYSES

Target Concept Label:

Thank You Letter
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supra-ordinate concept, then all attributes of the target concept should be given.)

A thank you letter is a letter that shows appreciation for a gift or favor.

Supraordinate Concept(s):

friendly letter

Coordinate Concept(s):

invitation

Subordinate Concept(s):

none

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A thank you letter:

a) is a letter that has a greeting
b) is a letter that has a signature
c) is a letter that showsappreciation for a gift or favor

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to thank you letter are those of its supraordinate, friendly letter.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of thank you letter include:

1. the length and number of sentences
2. the type of greeting
3. whether or not it includes all of the letter parts
4. the type of closing used

Concept examples include the following:

Dear Mr. D

We really liked your party. The games were fun and made us all happy.

The Gang

Dear Sir:

I enjoyed the show you gave for our club. Everyone liked it so much.

B. D.

Hello,

Just a letter to let you know that your help saved the day. You were a friend in need.

Sally

Dear Bill,

I liked your card very much. It was so nice of you to send it.

Jane

Concept non-examples include the following:

Snow predicted for this evening
Flight 729, Eastern Airline, Chicago-Atlanta, 7:10 p.m.
Yesterday I watched Lost in Space on TV.

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

The body of a thank you letter shows appreciation.

CONCEPT ANALYSES

Target Concept Label:

Title
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, than all attributes of the target concept should be given.)

The title is a word or phrase that names a poem, book, or story.

Supraordinate Concept(s):

name

Coordinate Concept(s):

none

Subordinate Concept(s):

name of poem
name of story
name of report

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A title:

a) is a word or phrase
b) is a word or phrase that names something
c) is a word or phrase which has important words capitalized

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes relevant to <u>title</u> are those of its supraordinate, <u>name</u>.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of title include:

1. the number of words
2. the appearance in the index
3. the particular words capitalized
4. if the title is for a story, poem, or report

Concept examples include the following:

Moby Dick
Ranching in Texas
"The Yellow Rose of Texas"
Webster's Dictionary
"Mother Goose Rhymes"

Concept non-examples include the following:

Sincerely, Pete
14 Dallas Street, Akron, Ohio
Houston, Texas

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

The title comes before the topic sentence.

CONCEPT ANALYSES

Target Concept Label:

Topic Sentence
(Area: Connected Discourse)

Definition that gives the name of the supraordinate concept and the criterial attributes of the target concept. (If there is no supraordinate concept, then all attributes of the target concept should be given.)

The topic sentence is the sentence that tells the main idea of a paragraph.

Supraordinate Concept(s):

sentence
statement

Coordinate Concept(s):

sentence giving detail
explanation

Subordinate Concept(s):

opening sentence
ending sentence

Criterial attributes that differentiate the target concept from the supraordinate concept (or coordinate concepts if a supraordinate has not been identified).

A topic sentence:

a) is a complete sentence
b) is a sentence found in a paragraph
c) is a sentence which tells the main idea

Other attributes that are relevant but not criterial for the target concept. (The attributes of the supraordinate need not be specified.)

Other attributes of topic sentence are those of its supraordinate, sentence.

Irrelevant attributes of the target concept (attributes which vary among instances of the target concept) include the following:

Irrelevant attributes of topic sentence include:

1. the position in a paragraph
2. the number of different parts of speech in the sentence
3. the particular topic of the sentence
4. its presence in an outline

Concept examples include the following:

Cats are sometimes funny.
In some countries cows are holy.
Someone once said, "Cows are nice."
A cow is a four-legged mammal.
I like fruit.

Concept non-examples include the following:

It didn't give any milk.
It tastes good.
My favorite fruit is red apples.
Candy is not as good for you as fruit.

Relationship with at least one other concept. (This relationship should preferably be a principle. It should definitely not be a direct supra-ordinate-subordinate relationship, a relationship involving a criterial attribute, or a relationship involving an example.)

Other sentences in a paragraph add more ideas about the topic sentence.